



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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January 28, 2011

Colonel Jeffrey M. Hall
District Engineer
U.S. Army Corps of Engineers, Savannah District
Attn: Mr. Bill Bailey, Chief, Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

SUBJ: EPA Review of COE's "Savannah Harbor Expansion Project" (November 2010);
Tier II DEIS; Chatham County, Georgia and Jasper County, South Carolina;
CEQ No. 20100453; ERP No. COE-E32083-00

Dear Colonel Hall:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject U.S. Army Corps of Engineers (COE), Savannah District, Tier II Draft Environmental Impact Statement (DEIS) for the Savannah Harbor Expansion Project (SHEP). The project is proposed by the Georgia Ports Authority (GPA) of the Georgia Department of Transportation, the non-federal project sponsor (sponsor). This DEIS discloses the environmental impacts associated with deepening the inner harbor and entrance (ocean bar) navigation channel to alternative incremental depths of up to -48 feet (ft)¹, with an additional -2 ft allowable over depth dredging and -6 ft advance maintenance dredging in shoaling areas. Over the last 15 years, EPA has coordinated extensively with the Savannah District and other agencies on SHEP technical issues and draft documentation. This letter outlines and summarizes several of the issues identified and analyzed during EPA's review; however, EPA's detailed substantive conclusions, recommendations and comments on the DEIS are contained in the Enclosure to this letter (*EPA Recommendations and Additional Comments*).

The 1999 Water Resources Development Act (WRDA) authorized the COE to dredge Savannah Harbor to a maximum depth of -48 ft ("Maximum Authorized Plan"), which is a -6 ft deepening of the existing conditions. Moreover, WRDA 1999 also addressed the project review process by requiring that the EPA Administrator and Secretaries of the U.S. Departments of Commerce (DOC), the Interior (DOI) and Army approve the selected plan and determine that the associated mitigation plan adequately addresses the potential environmental impacts of the project. EPA, the National Oceanic and Atmospheric Administration (NOAA) of DOC and the U.S. Fish and Wildlife Service (FWS) of DOI are also NEPA Cooperating Agencies for this COE EIS.

The COE also issued a Chief of Engineers' Report in 1999 which provided further direction on the additional studies that needed to be conducted, including a General

¹ All referenced depths are at Mean Low Water.

Re-evaluation Report (GRR). The GRR accompanies the DEIS, and EPA understands from WRDA 1999 that taken together, these two documents are intended to completely describe the investigative work conducted and present information and analysis to satisfy the conditional authorization, NEPA, and the direction of the Chief of Engineers' Report.

Background

The historic natural depth of the Savannah River is only -12 ft. The present navigation channel for the Port of Savannah was last dredged in 1993-1994² to -42 ft (inner harbor) and -44 ft (entrance channel)³. Since the City of Savannah was settled far upstream by the English in 1733 on the Savannah River's southern bluff, the navigation channel from the Atlantic Ocean to the port today totals 32.7 miles (mi) in length (21.3 mi inner harbor and 11.4 mi entrance). The channel is also 200-500 ft wide in the inner harbor and 600 ft wide in the outer entrance channel, and includes six turning basins.

The NEPA review for SHEP has an extensive and complex history. Early NEPA efforts (Tier I) consisted of the Savannah District adopting a GPA feasibility study and issuing an EIS in 1998. Because of resource agency environmental concerns with the Tier I EIS, the present Tier II NEPA was initiated in early 2002 with both a public and a NEPA scoping meeting. Approximately 10 years of technical field studies, modeling and other analyses have been conducted since Tier I, involving the study of water quality, wetlands, sediments, fisheries, air quality and other environmental factors affected by the proposed harbor deepening. EPA has been extensively involved with the interpretation of water quality modeling data, with emphasis on predicting dissolved oxygen (DO) concentrations within the riverine system augmented by direct oxygen injection as project mitigation. EPA understands that such DO and other project mitigation is estimated to cost over \$150 million, with an overall project cost approximating \$500 million.

Independent of this Tier II NEPA process, the GPA sponsor is providing ongoing efforts to reduce port air emissions by reducing the use of diesel fuel through efficiency and electrification (pg. 5-151⁴; pg. 101: App. K). These initiatives together with EPA's new ultra-low sulfur diesel standards have progressively reduced port emissions for various landside diesel engines. Similarly, separate lower sulfur standards specific to marine vessels will become effective in 2015 to further reduce port emissions. In addition, EPA understands from GPA that they are in the process of independently contracting with a university to conduct air dispersion modeling to determine landside effects of port air emissions.

EPA requests participation in the design of this modeling study to ensure that it evaluates potential impacts on criteria pollutants (National Ambient Air Quality Standards: NAAQS) and air toxics relative to sensitive port landside receptors. EPA expects that the modeling will be completed and recommends that results be fully described in the Final EIS (FEIS) for public review. Importantly, the review of current and future project emissions for various containerized

² After initial navigation channel construction in 1874, channel deepenings prior to 1994 occurred in 1912, 1936 and 1945.

³ However, certain channel portions such as the Kings Island Turning Basin may be considerably deeper.

⁴ Referenced page numbers generally refer to the DEIS main document (Vol. 1) unless otherwise noted.

vessel sizes should use a standard unit of comparison (e.g., emissions per container unit). Further, EPA anticipates that there may be additional ways to reduce emissions from the project. Therefore, in these NEPA comments (see Enclosure), EPA is providing recommendations for additional streamlining and mitigation (e.g., shore power to reduce emissions from vessel idling) to further offset port diesel emissions and enhance the sponsor's environmental management system for the port.

COE Collaboration with Stakeholders

EPA commends the COE for its significant efforts to inform the public, the Stakeholders Evaluation Group (SEG), local communities, and numerous State and federal resource agencies regarding the many issues associated with the proposed harbor deepening. EPA understands that since its inception in January 1999, the COE has met with the SEG approximately 65 times to discuss the proposed deepening. In addition to the scoping meetings of 2002, a number of meetings with the public and agencies have been held to discuss project issues such as salinity changes, lowered DO, conversion of freshwater to brackish wetlands, benthic organisms, contaminated sediments, economics, and cumulative impacts related to the proposed harbor deepening.

Purpose and Need

The Port of Savannah consists of two publicly-owned and 20 privately-owned terminals, with GPA providing the public Garden City Terminal (GCT) and Ocean Terminal. The DEIS (pp. 2-2 & 5-149; pg. 61: App. K) describes the economic importance of the Port of Savannah to Georgia if not the southeast. Dry bulk, liquid bulk and general cargo/container commodities are shipped into the port, with GCT presently handling 2.6 million twenty-foot equivalent container units (TEUs) from containerized vessels. The COE predicts a long-term approximate 3 percent per year growth rate⁵ in TEUs and a maximum GCT operating capacity of 6.5 million TEUs. Through the proposed harbor deepening project, GPA wishes to continue to be competitive by being able to readily accommodate large post-Panamax-sized vessels (i.e., having a vessel capacity for 6,000 or more TEUs and a design draft of 46 feet (pg. 3: App. K) or greater).

At its current dredged depth of -42 ft (inner harbor) and -44 ft (entrance channel), Savannah Harbor cannot accommodate post-Panamax container vessels without waiting on high tides and/or limiting cargo weight. According to the DEIS, in excess of 70 percent of the fleet of calling vessels were not at their maximum load and design draft.⁶ The proposed harbor deepening project is proposed to minimize existing depth navigational problems by allowing commerce with "more fully loaded and deeper draft vessels" (pg. 2-2). Because river/channel widths are relatively narrow, larger vessels calling on the port are also further constrained by not being able to pass each other while navigating the channel, which results in one-way inbound and outbound vessel traffic.

⁵ The FEIS should discuss the source and rationale of this projected 3 percent growth rate referenced on page 61 (App. K) over the 50-year life of the project.

⁶ The DEIS Abstract (pg. 1) offers no timeframe with this statement, although Appendix K (pg. 3) references a 2006 date. The FEIS should also include this timeframe in the Abstract.

Regarding project and associated timeframes, project startup is expected in 2015-2016 after four to five years of proposed dredging, the life of the project is 50 years (2065), the port will reach operational capacity by 2032 (according to the COE⁷) based on the one-way vessel traffic constraint in the Savannah River channel, the Panama Canal expansion to accommodate international post-Panamax-sized vessels is to be completed by 2014-2015, and use of lower sulfur fuels would be required for marine vessels (such as those calling on the port) in 2015.

Alternatives

The DEIS evaluates five harbor deepening Action Alternatives and the No Action Alternative (no deepening). These incremental deepenings and their predicted volume of new work dredged material (in million cubic yards: mcy) are as follows (pp. 3-16 to 3-18):

- -42 ft (0 ft deeper: 0 mcy) – No Action Alternative (Without Project Condition)
- -44 ft (2 ft deeper: 10.3 mcy) – Action Alternative
- -45 ft (3 ft deeper: 14.6 mcy) – Action Alternative
- -46 ft (4 ft deeper: 19.0 mcy) – Action Alternative
- -47 ft (5 ft deeper: 23.6 mcy) – Action Alternative (COE's Tentatively-identified National Economic Development (NED⁸) Plan and Possible Tentatively Recommended Plan)
- -48 ft (6 ft deeper: 28.3 mcy⁹) – Action Alternative (WRDA's Maximum Authorized Plan, Sponsor's Locally Preferred Plan, and COE's possible Tentatively Recommended Plan)

COE's Tentative NED and Recommended Plan Options

The -47 ft alternative is the COE's tentatively-identified NED Plan because the COE found it to be the alternative with the maximum net economic benefit. According to the DEIS, the NED Plan would be recommended for implementation (Recommended Plan) unless there are "overriding conditions" to favor another plan (pg. 3-19). However, such conditions may exist in this case as GPA supports the -48 ft alternative and it could become the non-federal, cost-share sponsor of that deeper alternative (pg. 2) and fund the additional cost difference between its -6 ft deepening and the NED Plan's -5 ft deepening (the FEIS should verify if this will be the case). For the purposes of the DEIS, however, the COE did not identify a single Tentatively Recommended Plan, so that both the -47 ft and the -48 ft alternative are the COE's Tentatively

⁷ As discussed herein, EPA believes that port landside activities could still grow beyond 2032 throughout the life of the project.

⁸ Per page 2 of the DEIS (Vol. 1), the NED is "the plan that maximizes net economic benefits to the Nation and fully complies with Army policy."

⁹ Page 5-97 indicates that 38.8 mcy, instead of 28.3 mcy, would be dredged for the -48 ft alternative. The FEIS should clarify this apparent inconsistency.

Recommended Plan at this time (pg. 3-22). A final COE Recommended Plan should be identified in the FEIS and selected in the COE's Record of Decision (ROD).

Dredging associated with the -47 ft or -48 ft alternative would generate significant volumes of dredged material excavated from the navigation channel, turning basins, bend wideners, harbor berths, and construction of a lengthy extension of the entrance (ocean bar) channel. The large volume of dredged material is primarily due to the upstream location of the existing Port of Savannah and therefore the long length (and depth) of the navigation channel for ocean access.

Projecting Port Growth

The DEIS alternatives analysis assumes some port growth over the life of the project. However, it appears that the COE and EPA maintain different perspectives on the economic and environmental effects of implementing the proposed action (SHEP harbor deepening) versus continuing the no action (existing condition without the project).

The DEIS states that the COE believes that the proposed action (Recommended Plan) would not increase the number of containers (TEUs) that would be processed at the port when compared to the No Action Alternative – even though the fleet mix would change to fewer vessels (larger post-Panamax) compared to the current greater volume of smaller vessels. The COE agrees that there would be port growth over time, but maintains that growth would be the same with or without the proposed action. Accordingly, the number of TEUs would stay constant (or the growth rate would stay the same) with or without the project so that port vessel, truck and train emissions would be the same (or would grow the same). A consequence of this assumption is the belief that the port air quality would not change due to the project and would improve with the replacement of multiple smaller vessels with fewer larger ones (as well as the required use of lower sulfur fuels by calling vessels in 2015). The DEIS provides insufficient information for EPA to agree with these statements, and we request additional modeling to evaluate these statements and other general conclusions regarding air emissions.

EPA acknowledges that the ability to fully accommodate larger (and presumably efficient) vessels could result in operational efficiencies that could – at least initially – reduce the number of vessel trips. Fewer vessel trips for the same amount of projected cargo weight (e.g., TEUs) along with introduction of cleaner diesel fuels by 2015 could result in a net reduction in ship emissions. However, in contrast to the COE's perspective, EPA believes that over the life of the project, the projected growth in port commerce could cause a commensurate increase in the overall vessel trips and in the number of TEUs, thereby resulting in possible increases in vessel, truck and train emissions. That is, compared to the No Action Alternative, EPA believes that the number of vessels, cargo and emissions would likely increase more over time with the operational efficiencies of the harbor deepening project, despite the use of larger vessels and cleaner fuels.

Notwithstanding these issues, EPA is pleased that the DEIS (App. K) provided an emissions inventory for the pollutants of various port sources (i.e., several criteria pollutants and other parameters such as CO, CO₂, SO₂, NO_x, HC, PM_{2.5}, PM₁₀ and/or VOC). Moreover, in

addition to current emissions data, some air quality data for the future condition¹⁰ were also provided to help determine any changes in emissions due to port growth. Disclosure of future air emissions for the No Action Alternative or the proposed action – regardless if considered the same or different scenarios from an air quality perspective – is useful in documenting an estimate of port air quality changes from the current to future condition.

Project Environmental Impacts

Overall, the proposed action has the potential to lower DO water quality, impact tidal freshwater wetlands by excavation and conversion to brackish wetlands or saltmarsh, and reduce fishery habitat for the federally-endangered Shortnose sturgeon and other anadromous fishes. Impacts to these important resources would occur as a direct result of sediment removal during the dredging of the navigation channel and widening of turning basins, as well as indirect impacts through increasing upstream salinities through exacerbating saltwater intrusion.

Our major concern during the Tier I and II NEPA process has been the ability to mitigate project DO impacts attributable to dredging. After extensive interpretation of DO hydrodynamic modeling data, EPA finds that project DO depletions can be reasonably restored to pre-project conditions and evenly distributed within the affected river reaches using Speece Cones for direct oxygen injection into the River. The modeling concluded that such oxygen injection would be sufficient to not only serve as DO mitigation for project losses but also for underestimated DO deficiencies associated with the last harbor deepening to -42 ft. Such artificial injection is expected to elevate DO concentrations by +0.42 mg/l on average, which would raise these river reaches to levels approaching 3.5 mg/l. To ensure that the DO mitigation is sufficient under drought conditions, EPA requests the COE assess and document in the FEIS the August 1999 low-flow conditions similar to the August 1997 normal-flow data analysis provided in the DEIS.

To achieve success in project DO mitigation, EPA expects three assurances from the COE and/or GPA sponsor. These are: 1) post-construction field monitoring of DO levels to ensure the above-described level of DO restoration, 2) guaranteed mitigation throughout the life of the project, and 3) installation and operation of the Speece Cones before dredging begins to ensure that the project's predicted impacts to DO are minimized and mitigated from the outset in order to avoid any potential temporary impacts on the aquatic community while dredging occurs.

EPA's conclusion concerning the sufficiency of the proposed DO mitigation focuses on a water quality perspective to ensure that pre-project DO levels are maintained. We therefore defer to NOAA and FWS for their ecological interpretation of these concentrations relative to DO effects on fishery (e.g., Shortnose sturgeon) and refuge (e.g., Savannah National Wildlife Refuge: SNWF) mandates under their purview.

Project DO mitigation would primarily only restore DO levels to pre-project conditions, and there remains a continuing need to improve the overall DO water quality of the Savannah River system. In this regard, EPA is currently working to revise the DO Total Maximum Daily

¹⁰ The Appendix K emissions inventory provides current and future (to 2032) emissions data for air toxics, but limits emissions data to the current condition for several criteria pollutants and other measured emissions from port sources.

Load (TMDL) for Savannah Harbor. Consistent with 40 CFR §122.44(d)(1)(vii)(B), EPA expects that the wasteload allocations for the oxygen-demanding substances contained in the TMDL, along with any relevant assumptions and requirements, will be implemented through the state National Pollutant Discharge Elimination System permit program. EPA proposed a draft DO TMDL for Savannah Harbor in May 2010 based on Georgia's revised water quality standard, which would require an approximate 85 percent aggregate reduction in point source loads. Successful implementation of the loadings required by a TMDL for DO, and any additional DO mitigation provided by the Speece Cones beyond the impact of this deepening project, would together ecologically benefit the Savannah River system.

In addition to these EPA-related issues, EPA emphasizes the importance of fully evaluating the potential for SHEP dredging to impact the habitat of endangered species (Shortnose sturgeon) and other anadromous fishes such as the popular Striped bass, and also the indirect wetland impacts of converting tidal freshwater marsh habitat into brackish wetlands or saltmarsh at the Savannah National Wildlife Refuge (SNWR) and other freshwater marshes by exacerbating saltwater intrusion.¹¹ We recommend continued coordination with FWS and NOAA regarding opportunities for developing appropriate mitigation for these impacts.

Beyond EPA's primary DO water quality concern, other substantive project concerns include wetland mitigation, general air quality, air toxics, sediment issues, and environmental justice (EJ)/children's health. EPA believes these remaining issues need additional analysis in the FEIS to complement the DEIS. As a NEPA Cooperating Agency, EPA recommends further COE coordination on these issues with EPA, including our review of draft documentation prior to the FEIS. Our remaining issues are summarized below:

+ Wetland Mitigation: Overall, EPA believes that the COE Wetland Mitigation Plan proposed in the DEIS should be further refined. The proposed Plan, which presently appears to emphasize the preservation of freshwater wetlands, should be modified to be consistent with Section 404(b)(1)Guidelines/2008 Mitigation Rule to replace in-type and function of both the freshwater and saltwater wetlands being project impacted. It is important to recognize, if technically supported, the wetlands preservation approach can be an element of this functional replacement mitigation approach such that these two approaches need not be mutually exclusive. A refined Plan should replace the functional impacts to all wetland types; be adequate given the proposed mitigation actions, the timeframe and the risk factors; and comply with all requirements of the 2008 Mitigation Rule. EPA recommends that the FEIS include a draft Plan prepared by the COE in cooperation with an interagency wetland mitigation "working group" including EPA, FWS and others. Given the additional requirement within WRDA 1999 that the mitigation plan shall be implemented before or concurrent with the project, it is important that this Plan be finalized in the ROD.

+ General Air Quality: The FEIS should demonstrate that project emissions do not interfere with area attainment and maintenance of the NAAQS for either the No Action Alternative or the Tentatively Recommended Plan. Accordingly, the FEIS (App. K) should provide a future condition analysis through the end of the project (2065). As part of this

¹¹ For the -47 ft deepening alternative, 1,177 acres of freshwater marsh would be converted and 1,212 acres for the -48 ft alternative (pg. 5-13).

evaluation, EPA requests that dispersion modeling be conducted to determine how landside emissions will impact local area air quality, with emphasis on port traffic effects in potential EJ areas and any possible NAAQS violations. The current emissions inventory of the DEIS (App. K) does not provide a future condition emissions analysis for comparison against the current conditions data provided for the selected criteria pollutants and other parameters measured, or a dispersion analysis. Furthermore, to verify the DEIS assumption that future larger vessels (Panamax and post-Panamax) calling on the port produce less emissions than the existing smaller fleet, the FEIS should compare the fuel efficiency/emissions of larger versus smaller vessels using an “emissions per TEU” metric as the basis of comparison.

+ Air Toxics: A significant number and volume of air toxics are associated with operating the port, with significant emission increases being expected over time (38 tons in 2008 to a range of 117-123 tons in 2032 per Appendix K of the DEIS). These emissions are a source of concerns to residents living in communities surrounding the Port. Accordingly, EPA requests the preparation of a screening level risk assessment to evaluate the potential impacts associated with emissions of air toxics related to the harbor deepening and its operation. Moreover, although the Appendix K emissions inventory for air toxics provides both current and future emissions data as noted earlier, future conditions data were considered the same after 2032 based on the assumption that the number of calling vessels will be constrained by 2032 (due to one-way vessel traffic) such that there will be no increase in freight thereafter. EPA believes that the future condition analysis for air toxics (and NAAQS) should extend beyond 2032 to encompass the entire 50-year life of the project (2065). The tonnage and number of TEUs could continue to increase after 2032 (along with associated additional truck/locomotive landside emissions impacts). Since not all calling vessels currently offload 100 percent of their containers at Savannah, the number of TEUs offloaded at Savannah could conceivably increase after 2032. Also, the requested dispersion modeling for criteria pollutants should include air toxics emissions. Modeling results should be used in the requested screening level risk assessment to help determine effects on landside sensitive receptors such as potential EJ areas located along road/rail corridors noted in the DEIS (pg. 5-147) and determine any areas of localized higher concentrations.

+ Sediment Issues: Dredged material disposal should be conducted in accordance with Section 404 of the Clean Water Act or Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) consistent with EPA and COE policies provided in the joint guidance document, *Evaluating Environmental Effects of Dredged Material Management Alternatives – A Technical Framework*. In accordance with this Technical Framework, offshore disposal outside of three miles should be conducted pursuant to MPRSA and within an EPA-designated Ocean Dredged Material Disposal Site (ODMDS), in this case the Savannah ODMDS. The DEIS proposes that a portion of the project’s dredged material from the ocean entrance channel be disposal at sites 11 and 12 near the channel as experimental fish habitat mounds. Although EPA generally supports fisheries enhancements and acknowledges that there is a fisheries exemption under MPRSA, we believe that this proposed reuse may not be consistent with MPRSA and would likely offer minimal fisheries habitat value. Therefore, EPA does not currently support the proposed disposal at sites 11 and 12, and recommends the evaluation of other alternatives, such as use of the Savannah ODMDS for the disposal of this material. EPA recommends further

coordination with EPA, U.S. Coast Guard, and NOAA and their state fisheries counterparts regarding these issues, and the results of such coordination should be documented in the FEIS.

In addition, the DEIS documents the COE's intent to use dredging to extend the current channel offshore for over seven miles since ocean water depths in these areas will not accommodate post-Panamax vessels under all tide and cargo conditions. This channel extension would constitute an estimated 17- to -18 percent increase in the project channel length, and an additional 4.6 mcy of new dredged material. This project component should be fully analyzed and discussed in the FEIS. Specifically, the FEIS should address the multiple factors outlined in the Enclosure, including full characterization of the dredged material, identification and analysis of disposal options, potential evaluation of the Savannah ODMDS capacity in relation to any material that would be disposed in the ODMDS, precise identification of the proposed channel route and alternative routes, and discuss findings. EPA's full understanding of the ocean channel extension component is essential to the overall NEPA analysis and Agency approval of the SHEP. Therefore, EPA requests the opportunity to review and comment on the new channel dredging sections prior to the issuance of the FEIS. EPA also notes that based on the incomplete information on this issue in the DEIS, the public may not have a full understanding of this issue for purposes of public review and comment.

+ *Environmental Justice & Children's Health*: Because most of the communities surrounding the project have elevated levels of minority and low-income populations (45 percent of the population of Chatham County, Georgia, is comprised of minorities), it is appropriate that project effects on potential EJ communities and children's health were considered in the DEIS consistent with NEPA and relevant Executive Orders (EO 12898 and EO 13045). These analyses should be expanded in the FEIS to include potential landside emission effects on nearby populations (as previously requested above: *General Air Quality*), public concerns offered at the SEG and other meetings and their follow-up outcomes, and disclosure of the demographics of children under age 18 within the project area. As one offset to project impacts, we understand that members of the local community may economically benefit from the project by securing some of the 175 additional positions expected by 2020 due to port cargo growth.

Summary

While the proposed SHEP Action Alternatives have the potential to lower DO water quality, directly and indirectly impact tidal freshwater wetlands, and reduce fishery habitat, EPA finds that project DO depletions can be reasonably restored to pre-project conditions and evenly distributed within the affected river reaches using Speece Cones for direct oxygen injection into the river. Such artificial injection is expected to elevate DO concentrations by +0.42 mg/l on average, which would raise these river reaches to levels approaching 3.5 mg/l. To achieve project success, EPA expects assurances from the COE and/or GPA for post-construction field monitoring of DO levels to ensure this level of DO restoration, a financial guarantee to ensure continuation of the proposed mechanical mitigation throughout the life of the project, and Speece Cone installation and operation before dredging begins to minimize the potential impacts on the aquatic community.

EPA's conclusion concerning the sufficiency of the proposed DO mitigation focuses on a water quality perspective to ensure pre-project DO levels are maintained. We defer to NOAA and FWS for their ecological interpretation of these concentrations relative to DO effects on their fishery and refuge mandates. The proposed alternatives should continue to be closely evaluated to ensure that the construction and subsequent operation of any harbor deepening would not further cause or contribute to the ongoing DO impairment in the harbor.

In addition to EPA's DO water quality concern, our other substantive project concerns include wetland mitigation, general air quality, air toxics, sediment issues, and EJ/children's health. As a Cooperating Agency, EPA recommends further COE coordination with EPA on these remaining issues, including our review of draft documentation prior to the FEIS.

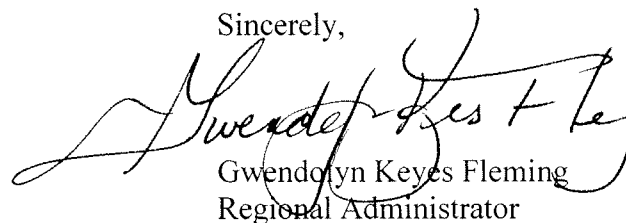
Additional findings and detail of our DEIS review are provided in the Enclosure to this cover letter.

EPA DEIS Rating

EPA rates this DEIS as an "EC-2" (Environmental Concerns, additional information requested). EPA bases this rating on the overall project impacts and the additional information requested for the FEIS. If this harbor deepening project is further pursued by the sponsor, EPA expects our additional information requests will be incorporated in the FEIS and that the impacts of the proposed project will be fully mitigated consistent with the policies and regulations of the COE and its Cooperating Agencies and guaranteed throughout the life of the project. Although the COE has not yet identified a Recommended Plan, EPA believes the proposed DO mitigation would be sufficient to reasonably restore DO levels to pre-project conditions for any of the considered incremental harbor deepening alternatives (-44 ft to -48 ft).

EPA appreciates the opportunity to review the Tier II DEIS and the significant coordination the COE has provided over the project years. Should you have questions regarding our comments, you may wish to contact A. Stanley Meiburg, Deputy Regional Administrator, or Heinz Mueller, Chief of the NEPA Program Office coordinating the NEPA review, at 404-562-9611 or mueller.heinz@epa.gov.

Sincerely,



Gwendolyn Keyes Fleming
Regional Administrator

Enclosure

ENCLOSURE

EPA RECOMMENDATIONS & ADDITIONAL COMMENTS

Based on our review of the SHEP DEIS, EPA offers the following project conclusions and recommendations on DO water quality, wetland mitigation, general air quality, air toxics, sediment quality and disposal, and EJ/children's health, as well as additional comments on various project topics.

> RECOMMENDATIONS

>> *DO Water Quality*

+ Dissolved Oxygen Impacts: Without mitigation, the proposed Savannah Harbor deepening project would result in a reduction in the dissolved oxygen (DO) in the Savannah River and Harbor area. The DEIS proposes to inject oxygen at three locations to mitigate the decrease in DO due to the physical dredging of the Harbor. The depressed dissolved oxygen levels are greater in the bottom portion of the River system. The proposed mitigation plan would result in an average increase of dissolved oxygen in the lower half of the River system of +0.42 mg/l DO above existing DO conditions or an 8.8% net increase in dissolved oxygen in the River system. This net improvement in DO is based on the August 1997 river flows representative of the average summer flows under critical temperature conditions. Based on this analysis, the overall impact of the proposed deepening and mitigation is a net improvement in the available DO under average summer flow conditions. To ensure that the DO mitigation is sufficient under drought conditions, EPA requests the COE assess and document in the FEIS the August 1999 low-flow conditions similar to the August 1997 normal-flow data analysis provided in the DEIS.

As discussed more fully below, the data in the DEIS based on the water quality model results indicate there are only four locations where the proposed mitigation does not fully mitigate for project impacts on DO. In three of those locations, EPA concludes that the lack of complete mitigation would not result in a failure to attain water quality standards that were previously attained, nor would it adversely affect habitat. In one location, involving a portion of Segment FR11, the lack of complete mitigation in this portion did not prevent the entire Segment FR11 from attaining a net increase in DO with mitigation. EPA defers to NOAA and the FWS to determine whether potential loss of habitat is significant. However, the data overall support the conclusion, as described above, that the proposed mitigation plan will produce a net increase in DO throughout the River system impacted by the proposed dredging project.

The determination that there are only four locations where the proposed mitigation does not fully mitigate for the project impacts on DO was based on a full analysis of the modeling of expected localized impacts throughout the Savannah River and Harbor system. The following discussion contains EPA's analysis of each of these localized instances in relation to compliance with applicable water quality standards (WQS) and anticipated impact on habitat.

The WQS for DO for this portion of the River are a daily average of 5.0 mg/l DO and 4.0 mg/l minimum for both Georgia and South Carolina. The Georgia WQS specify a compliance point for the dissolved oxygen standards as one meter below the surface for rivers with a depth exceeding two meters. South Carolina WQS are silent on the compliance depth, but their approved Section 303(d) assessment methodology references a 0.3 meter depth for grab samples for DO to determine compliance with the WQS. The DEIS focused the DO analyses on the lower portions of the river system to assess impacts on aquatic organisms sensitive to depressed DO at the lower depths.

The WASP-EFDC water quality model, described in Section 5 of the DEIS, was used in order to assess any isolated areas negatively impacted by the lowering of DO due to dredging. The River system is divided into 27 segments, each with several cells defined by depth, length and width. There are six depth layers and the River channel geometry determines how many cells are needed to adequately cover the length and width of each segment. There were two analyses performed. The first considers the distribution of the DO values for August 1997 calculated by averaging the DO values in all cells in the bottom three layers of each segment. The second evaluated the impacts of the mitigation plan on the most impacted cell in each segment (the "critical cell"). The results of these two analyses are assessed below.

The first analysis concluded that 26 of the 27 segments experience a net increase in DO from existing conditions to post-deepening, mitigated conditions. One segment, MR6, was not fully mitigated as compared to existing DO conditions. As can be seen in the table below, the lowest dissolved oxygen values found at the first and fifth percentiles of the samples would be slightly improved from existing conditions. The most significant percent net reductions in dissolved oxygen occur at the 50th percentile and above when the DO values are maintained at or above the 5.0 mg/l daily average water quality standard. The percentage of time the water quality standards are not attained under existing conditions, less than the 50th percentile, is not changed with the DO mitigation. However, there is a net loss of DO of 0.11 mg/l at the 25th percentile and a net loss of 0.22 mg/l at the 25th percentile.

DO Concentration Percentiles (mg/l) for Existing and Mitigated Conditions in MR6									
Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%
Existing	2.15	2.53	3.05	3.58	5.69	6.33	6.80	6.94	7.27
Mitigated	2.23	2.51	2.93	3.36	4.99	5.39	5.55	5.66	5.91

Although the MR6 segment is not fully mitigated with respect to DO, an evaluation of the fishery habitat maps in Appendix P, indicate that MR6 does not contain any segments which adversely impact the sensitive fish species assessed in the DEIS.

The second analysis concluded that four segments had critical bottom cells that were not fully mitigated by the proposed oxygen injection system. These segments are FR2, FR11, MR6, and LBR3. Each critical cell is evaluated below.

The critical cell in FR2 was fully mitigated except at the 99th percentile DO concentration which changed from 5.09 mg/l for the existing condition to 4.87 mg/l under the mitigation plan. All other percentiles indicated the DO was increased with the mitigation plan. Segment FR2 is

located below the portions of the River system evaluated for habitat impact. Therefore, this critical cell is not a concern regarding impacts to the aquatic community.

The critical cell in FR11, located in the SNWR above the dredged zone, exhibited significant impairment under the proposed mitigation plan. This impairment is due to the geometry of the River, sediment oxygen demand, and long hydraulic retention time caused by the localized conditions. A table comparing the changes in the DO profile is presented below.

DO Concentration Percentiles (mg/l) for Existing and Mitigated Conditions in FR11									
Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%
Existing	4.17	4.7	4.93	5.24	5.67	6.14	6.5	6.64	7.13
Mitigated	2.71	2.69	2.72	2.74	2.78	2.89	3.03	3.11	3.18

Even though this one cell is significantly impaired the average DO for the entire bottom three layers of Segment FR11 increased by 6.2% under the mitigation plan. This decrease in DO in the critical cell is likely contributing to habitat loss in a portion of the FR11 segment. This critical bottom cell covers less than one fifth of the length of FR11 and only the right half of the river channel. EPA defers to NOAA and the FWS to determine if this isolated loss of habitat is significant.

The critical cell in MR6 (the only Segment not fully mitigated) is located in the SNWR and is significantly impacted by the proposed dredging project as shown in the table below.

DO Concentration Percentiles (mg/l) for Existing and Mitigated Conditions in MR6									
Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%
Existing	2.11	2.49	3.01	3.51	5.61	6.36	6.80	7.06	7.32
Mitigated	2.64	2.65	2.66	2.7	2.81	3.02	3.26	3.39	3.49

The segment MR6 and its critical cell will experience lower water quality under the mitigation plan. However, this lower water quality is not expected to adversely impact fish habitat.

The critical cell in LBR3 which is located in the SNWR is not fully mitigated by the injection of oxygen. The proposed project impact on DO in the critical cell is shown below.

DO Concentration Percentiles (mg/l) for Existing and Mitigated Conditions in LBR3									
Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%
Existing	2.89	3.28	3.47	3.68	3.95	4.34	4.73	4.99	5.24
Mitigated	3.14	3.23	3.36	3.56	3.87	4.20	4.39	4.51	4.68

The lowest DO value is mitigated but the higher percentile values are not fully restored. However, for the whole bottom half of the LBR3 segment, there is a net DO addition of 15.3% calculated by averaging the DO increases for each percentile. An evaluation of the habitat maps in Appendix P indicates that the critical segment in LBR3 is associated with habitat gains for the Shortnose sturgeon juveniles and Stripped bass spawning and no impact on the other species. Therefore, the lower water quality in the critical cell was not deemed significant.

+ Monitoring & Adaptation: Because of uncertainties associated with modeling, EPA recommends that DO levels be monitored and adaptively managed to ensure adequate oxygen injection. As was discussed at the September 2010 Executive Steering Committee meeting, this mitigation function must also be guaranteed by the COE and/or sponsor throughout the life of the project, and be implemented prior to construction to avoid DO impacts during dredging. Moreover, financial guarantees for Speece Cone operation must be provided in the FEIS and ROD by the COE and/or sponsor for the life of the project.

+ Cumulative DO Benefits: EPA proposed a draft DO TMDL for Savannah Harbor was re-proposed in May 2010 based on Georgia's revised water quality standards, which would require an approximate 85% aggregate reduction in point source loads. Successful implementation of the loadings required by a TMDL for DO, and any additional DO mitigation provided by the Speece Cones beyond the impact of this deepening project, would together ecologically benefit the Savannah River system.

>> *Wetland Mitigation*

+ No Mitigation Credit for Sea Level Rise: Wetland marshes will be lost due to sea level rise effects over the long life of the project. Regardless of the value used in the COE analysis (e.g., +3 mm per year) to represent sea level rise, EPA believes that the proposed project should mitigate for actual wetland impacts that occur once construction is complete (the base year) and not take credit for any wetland losses due to sea level rise over the life of the project. Further, the COE should also ensure that the project fully mitigates for all impacts that would occur over the entire 50-year period of analysis.

+ Project Wetland Impact Summary: For the 48-ft deepening alternative supported by the sponsor, the project will excavate 14.08 acres of primarily saltwater tidal wetlands (saltmarsh). The project will also convert approximately 1,212 acres of freshwater wetlands to brackish wetlands or saltmarsh. As compensatory mitigation, the COE proposes to implement Plan 6A, which consists of a set of hydrological modifications in the Savannah Harbor which is predicted to restore freshwater flow to some areas and convert brackish wetlands to freshwater wetlands. Plan 6A reduces the net freshwater wetland loss to 337 acres. However, 730 acres of saltmarsh will also be converted to brackish wetlands.

+ DEIS-Proposed COE Wetland Mitigation Plan for SHEP: As mitigation for the wetland excavation impacts, the COE proposes to excavate an old confined disposal area (CDF 1S on the SNWR) down to tidal level. This would re-create approximately 45 acres of what is predicted to be saltmarsh. EPA notes that 29 acres would be dedicated to the impacts of the project and the remaining 16 acres would be "reserved" for future projects in the harbor. As mitigation for the 337 acres of freshwater wetland conversion impacts remaining after implementation of Plan 6A and the 730 acres of saltwater wetland conversion impacts, the COE proposes to preserve 2,683 acres of freshwater wetlands at a site or sites listed in a 1998 acquisition list for the SNWR. The COE used an application of the Savannah District Standard Operating Procedure (SOP) to justify these quantities of compensatory mitigation.

+ EPA's Recommended FEIS Wetland Mitigation Plan for SHEP: EPA recommends that the Wetland Mitigation Plan for SHEP include the following components:

1. Use a mutually acceptable technical approach to determine the loss (and gain, if any) of all wetland functions due to the project;
2. Apply the same approach to any proposed wetland mitigation action or site to determine wetland in-kind functional replacement;
3. Use an appropriate methodology (like an SOP) to ensure temporal and risk factors are taken into account in determining the quantity of any proposed mitigation;
4. If preservation is a component of the mitigation plan, develop site selection criteria and then identify candidate sites using the criteria;
5. Develop mitigation plans for any action/site that meet the criteria of the Mitigation Rule;
6. Ensure that all mitigation sites are protected in perpetuity in the target condition of the final Mitigation Plan, i.e., managed to sustain the in-kind wetland type;
7. Address cumulative wetland loss/conversion in the project portion of the Savannah River system;
8. As outlined in the 2008 Mitigation Rule, financial assurances for the complete implementation for the mitigation and monitoring plan should be included.

+ EPA's Concerns with Present DEIS Wetland Mitigation Plan: EPA offers the following comments and conclusions on the COE's proposed mitigation plan presented in the DEIS. Following the submission of all comments on the DEIS, we recommend the COE convene an interagency wetland mitigation "working group" consisting of agencies that commented on the mitigation plan, including EPA and FWS. The mitigation working group could then seek solutions to the issues we raise below and those raised by others. The goal of the group would be to develop an overall approach to compensatory mitigation that replaces the functions lost due to the project and to assist the COE in developing a refined draft Wetland Mitigation Plan for SHEP. The FEIS should incorporate the findings of this group and the draft Plan, while the final Wetland Mitigation Plan should be incorporated in the COE ROD.

* Overview: EPA recommends that the proposed compensatory mitigation plan be improved, as discussed below, to ensure that it fully complies with the Section 404(b)(1) Guidelines and the 2008 Mitigation Rule, and to ensure that it will not result in the net loss of wetland functions and types in the Savannah Harbor.

* Mitigation Using Wetland Preservation: The proposed preservation of 2,683 acres of some type of wetlands at an undetermined location in the Harbor represents a mitigation-to-impacts ratio of 2.5:1 for the remaining freshwater wetland impacts and the saltmarsh impacts. This is out-of-kind mitigation that is significantly below the ratios recommended in the 2001 EPA Region 4 Mitigation Policy for wetland preservation. EPA recommends development of screening criteria for wetland preservation consistent with the Mitigation Rule, focusing on wetlands that are of the highest function and which are under the most immediate threat by the project.

* Functional Assessment: The DEIS and its supporting studies did not employ a functional assessment to objectively and quantitatively evaluate the functional losses due to excavation of wetlands and conversion of wetland types from the SHEP. A functional approach is key to the assessment of wetland impacts and the analysis of adequate compensatory mitigation actions. We recommend that the interagency working group identify tools to determine the functional losses due to the project. This same tool should then be applied to any proposed wetland mitigation action. The comparison of the results should indicate whether or not the no-net-loss-of-function criterion is met.

* Monitoring Plan: There should be a detailed plan to monitor wetland functional changes throughout the harbor due to the deepening in the FEIS. This could involve the application of remote sensing methods. EPA recommends the Monitoring Plan be based on the parameters used in the functional assessment cited above. The duration of monitoring should be based on the expected time for full functional replacement. The plan should extend at least seven years after construction, which is the minimum monitoring period required by the Savannah District for any mitigation project of this magnitude.

* Data Collection & Monitoring: EPA recommends including a comprehensive baseline data collection and monitoring plan for the mitigation acreage, specifically, predicted acres of “restoration” of freshwater wetlands through conversion from saltmarsh/brackish marsh as identified in the implementation of Plan 6A.

* Preservation Site Selection: The proposed preservation action of selecting one or more properties from a 1998 list of 25 properties is vague (three of the properties are already government owned, two appear to have significant development and one was rejected as a restoration site). Alternatively, EPA recommends that an updated list of specific sites be identified, and that the five preservation criteria in the 2008 Mitigation Rule be applied to these sites as well as the other site selection criteria noted above.

* Standard Operating Procedure Application: Based on Savannah District Guidance, the SOP is not applicable for impacts over 10 acres, though with modification, it may be able to serve as an initial evaluation tool. The 48-ft project deepening alternative would excavate 14.08 acres and hydrologically impact/convert at least 1,212 acres of wetlands. The application of the SOP to this project affects the quantity of the proposed compensatory mitigation. This is partially due to the fact that the calculations lack a scaling factor. EPA recommends that the mitigation working group assess modification of the current SOP or use of another method to ensure an adequate quantity of compensatory mitigation is provided that will replace the wetland functions lost due to the project.

* SOP Factors: SOP factor selections appear to be inconsistent and clarification on the technical basis for the factors used is needed. Again, EPA recommends that the mitigation working group assess modification of the current SOP and the application of the impact factors or use of another method to ensure an adequate quantity of compensatory mitigation is provided that will replace the wetland functions lost due to the project.

* Threats to Preserved Tidally-Influenced Wetlands: The COE characterized the threat to any potentially preserved tidally-influenced wetlands as “moderate” due to potential development on nearby uplands, even though no specific site or sites were identified. EPA generally rates the threat to these types of wetlands as “low” or “none”, especially since the State of Georgia has been exerting ownership claims on all tidally-influenced wetlands that have a valid King’s grant. A significant degree of threat is one factor required for any preservation area under the Mitigation Rule and a lower degree of threat would result in significantly more preservation acreage being needed in the SOP calculations. EPA recommends the mitigation working group assess the project “threat” and incorporate it into the criteria for site selection.

* Differing Resource Agency Mitigation Approaches: Project mitigation for SHEP is somewhat confounded by different resource agency philosophies for mitigating the same wetland impacts. In general, EPA emphasizes a functional assessment of wetlands that is based on physical, chemical and biological metrics to restore or enhance wetlands to offset the functional losses due to a project. For this project, it appears that FWS has emphasized wetland preservation, with the preserved land added to the SNWR, as the preferred approach. Preservation clearly has a role in wetland mitigation but it should be consistent with the 2008 Mitigation Rule and should include a thorough functional assessment of the proposed preservation sites. EPA believes the mitigation working group could help resolve the differing approaches to wetland mitigation.

EPA in its review of wetland mitigation proposals applies the Section 404(b)(1) Guidelines and the 2008 Mitigation Rule (which amended the Guidelines). We understand that FWS has a strong preference for preservation and has placed a high value on freshwater tidally-influenced wetlands. This preference is also reflected in the COE’s wetland mitigation plan proposed in the DEIS. For example, while Mitigation Plan 6A may increase the acreage of freshwater wetlands, it will also decrease the acreage of saltmarsh and brackish wetlands. In contrast, EPA does not categorize and rank wetland types but instead looks for functional replacement for losses of any wetland type (i.e., all jurisdictional wetlands). Both mitigation approaches should be reasonably satisfied in the wetland mitigation plan of the FEIS, so that wetland function and habitat values will both be mitigated for project impacts. An ideal plan would seek to maintain or increase the functions of all wetlands in the Savannah Harbor area.

Reflecting the lack of a functional approach noted above, the DEIS places a higher “value” on freshwater wetlands, followed by brackish wetlands and finally saltmarsh. This was observed throughout the impact and mitigation evaluations. EPA believes that each wetland type has a unique suite of functions and alteration of these functions is a loss, regardless of the wetland type. While we agree that the Savannah Harbor is a highly managed and altered estuarine system, we recommend an objective analysis for assessing functional loss that is based on in-kind functional replacement.

>> *General Air Quality*

+ Vessel Efficiency – Appendix K of the DEIS states that “Since the total number of containerized vessels calling at the port would decrease with a deeper harbor, the total volume of air emissions would decrease.” To verify the DEIS assumption that future (post-project) larger

vessels (Panamax and post-Panamax) calling on the port produce less emissions than the existing smaller fleet, the FEIS should compare the fuel efficiency/emissions of larger versus smaller vessels using an “emissions per TEU” metric as the basis of comparison, and compare the emission levels per TEU for the smaller versus larger containerized vessels calling on the port.

+ NAAQS Attainment – The FEIS should demonstrate that project emissions should not interfere with area attainment and maintenance of the NAAQS under Section 110 of the Clean Air Act and NAAQS maintenance plan requirements. The FEIS should demonstrate this over the life of the project (2065) given the expected growth of the port. Such an analysis would require a project future condition analysis.

+ Future Condition Analysis: The Appendix K emissions inventory provides current and future emissions data (to 2032) for air toxics, but limits emissions data for several NAAQS and other parameters to current conditions. Therefore, EPA requests that the future condition for selected criteria and other measured pollutants also be included in the FEIS for either the No Action Alternative or the Tentatively Recommended Plan (since the COE believes them to be the same in terms of port growth and air quality).

+ Dispersion Modeling: There is no dispersion modeling in the DEIS to indicate how these emission increases will impact local area air quality monitors and communities, with emphasis on potential EJ communities. There is one target monitor of concern located in Garden City Terminal and another in downtown Savannah to determine how these emission increases will impact local area air quality. Since much of the truck traffic from the port travels through these areas, it is important to characterize the impacts along those routes to ensure that the increases will not adversely affect the models. EPA requests that the dispersion modeling evaluates potential impacts on both criteria pollutants (NAAQS) and air toxics relative to sensitive port landside receptors, with emphasis on potential EJ communities along road/rail corridors associated with the port.

+ Air Analysis Conclusions: The conclusions for the air emissions analysis section in Appendix K were somewhat general. The COE states that the emissions would occur with or without the project, but the COE has not supported the reasoning behind this statement. It is recommended that the COE provided documentation to support the analysis that the total cargo moving through the port would not increase or decrease as a result of the harbor deepening.

+ Recommended Additional Port Mitigation: EPA recommends the following additional streamlining and mitigation methods to further offset port diesel emissions and enhance the sponsor’s environmental management system for the port:

* *Shore Power* – Since the port is electrifying its cargo cranes, EPA recommends the port evaluate the possibility of including shore power during that upgrade. Installing shore power at the same time as electrifying the gantry cranes should save costs. Since the vessels are significantly larger, EPA expects the call time in port to extend beyond the current average turn time. While short turn times may not justify shore power, longer turn times make shore power a potentially viable option to reduce air emission impacts.

* *Dray Truck Upgrades* – EPA recommends that the port consider programs that incentivize upgrading of dray (on-port) equipment to 2007 standards.

* *Distribution Center* – EPA recommends that the port coordinate with the distribution center to establish no-idle-zones at distribution centers. There is no need for a vehicle to idle while it is being loaded or unloaded.

* *Eliminate or Reduce Creep Idle* – Creep idle is a significant source of pollution at many ports. The port should determine if creep idle is a problem and address it accordingly. The current gating process should be effective, but an evaluation will support this.

* *Alternative Fuels* – Use of biodiesel in port diesel equipment will reduce emissions of polycyclic aromatic hydrocarbons (PAH) significantly. The port should consider this as a future fuel choice. In addition, since there is a reliable source of liquefied petroleum gas (LPG) nearby, the port could consider switching all on-property diesel vehicles to LPG to reduce impacts. The port should consider this as part of operating agreements with Stevedores and shipping lines if they do not have direct control of the jockey trucks.

>> Air Toxics

+ Air Toxics Emissions – Table 5-64 (pg. 46 of App. K) estimates the emissions of 28 air toxics (e.g., 1,3-butadiene, acrolein, acetaldehyde, etc.) from the Garden City Terminal in 2008 to be about 38 tons. The corresponding estimates for the year 2032 range from about 117 to 123 tons (Tables 5-74 and 5-76). This is a dramatic increase and reflects the possible emissions from only one terminal.

+ COE Level of Analysis & Project Position – Toxicity information and estimated concentrations of the air toxic pollutants around the port are not provided in the DEIS. The potential health impacts associated with these air toxics emissions are not addressed in the DEIS. The DEIS states (pg. 108 of App. K), “More detailed analyses – such as dispersion analyses to identify ‘hot spots’ of pollution – could be conducted. However, the Port is not a major contributor to the overall emissions in the County. When coupled with the dispersed nature of many of those ‘Port’ emissions along the 34-mile length of the navigation channel, the Corps concluded that such additional analyses are not warranted.” Page 4 Section 2.0 (App. K) states, “This assessment does not include a detailed dispersion modeling assessment of these emissions or a risk-based assessment of the health effects associated with the proposed project.”

+ Screening Level Risk Assessment – As noted above, a significant number and volume of air toxics are associated with operating the port and significant increases in such emissions are expected over time. Therefore, EPA believes that locally, port air toxics are a potential concern to surrounding communities. The dispersion of emissions and the location and magnitude of the emission sources are important to determining whether a particular source poses a significant risk to those nearby. EPA Region 4 has provided detailed guidance (including references to well-prepared air toxics analyses by the COE at other ports) numerous times over the last several years of coordination to assist the COE in such an evaluation. EPA continues to support for a screening level risk assessment to evaluate the potential impacts associated with emissions of air

toxics related to the harbor deepening and its operation, both overall and potential any areas of localized higher concentrations, particularly in light of the projected increase in emissions of air toxics associated with the port over the next several years.

+ Vessel Cargo (App. K): While the Appendix K emissions inventory for air toxics provides both current and future emissions data, future conditions data were considered the same after 2032 since the COE maintains that the number of calling vessels will be constrained by 2032 (due to one-way vessel traffic) such that there will be no increase in freight thereafter. While the number of ships calling on the Garden City Terminal is at capacity in 2032, it is unclear how the COE made a determination that there would not be an increase in cargo offloaded or an increase in overall freight received. The FEIS should clarify if the capacity at the port to store and handle additional cargo is reached at the same time. Currently, every ship that calls on the Garden City Terminal does not offload 100% of its containers. If this is the case in 2032, then the capacity of the terminal itself is the key stabilizing factor and not the number of vessels calling on the port. If the capacity of the terminal has not been reached at 2032, then that same number of vessels could still offload more containers and increase the air emissions throughout the 50-year life of the project (to 2065).

>> *Sediment Issues*

+ Elevated Cadmium: The cadmium background is elevated in some Savannah River reaches, but its re-suspension in the water column during dredging is not expected to be a significant issue with application of appropriate Best Management Practices (BMPs), including the potential use of dredging methods that minimize potential cadmium re-suspension, as appropriate.

+ Upland Disposal: EPA finds that the upland disposal management plan for the project's cadmium-laden dredged material is acceptable, with the exception of a few minor inconsistencies. Overall, EPA concurs with the use of eight (8) upland confined disposal facilities (CDF's) provided by the GPA/GDOT non-federal sponsor for use as part of SHEP. These CDF's are known as 2A, 12A, 12B, 13A, 13B, 14A, 14B, and Jones/Oysterbed Islands. However, dikes at the CDFs will have to be raised in height over the next 50 years to provide the needed sediment storage capacity. EPA recommends that the FEIS provide additional information on long-term maintenance issues for Savannah Harbor, and commit to specific future review dates to consider advances in dredging technologies, changes in shoaling rates or environmental conditions, as well as changes in environmental laws.

+ Proposed Extension of Ocean Channel – The proposals in the DEIS include dredging to extend the current channel offshore for over seven miles since ocean water depths in these areas will not accommodate post-Panamax vessels under all tide and cargo conditions. This channel extension would constitute an estimated 17-18% increase in the project channel length, while the additional 4.6 mcy of new work dredged material is a 13-15% increase in the dredged material volume.¹

¹ The cited length and volume percentages are expressed as ranges due to some inconsistencies in the DEIS (e.g., the total dredged material volume for the -48 ft deepening is 28.3 mcy on page 3-18, but 38.8 mcy on page 5-97).

This project component should be fully analyzed and discussed in the FEIS. Specifically, the FEIS should address the following:

* *Characterize Dredged Material:* Were core samples taken, will hard/live bottom material be dredged, are sediments contaminated, are there any additional cadmium concerns associated with this project component, etc.? Should it be determined that hard/live bottom material will be dredged within the channel extension area, an analysis of fisheries mitigation would be necessary. EPA recommends that appropriately designed fisheries enhancement in-kind habitat mitigation be used to fulfill any identified mitigation requirements.

* *Offer Disposal Options:* What disposal areas are available, particularly given that the use of proposed sites 11 and 12 may not be appropriate (see *Dredged Material Reuse* below)?

* *Savannah ODMDS Capacity Evaluation:* Any plans requiring use of the Savannah ODMDS should include an ODMDS capacity evaluation to ensure the ability to accommodate the related volumes of dredged materials.

* *Provide Route Variations:* The DEIS does not identify the specific alignment of the proposed new channel extension. EPA understands that hard bottom habitat has been identified in the general vicinity of the new channel extension. Are there slight alignment shifts possible within the channel corridor to avoid any potential hard bottom habitat? What mitigation measures will be taken for impacts?

* *Discuss Funding:* Did the WRDA 1999 authorization include the funding and cover the scope of this proposed extension?

So that EPA can have a full understanding of the ocean channel extension component, EPA requests the opportunity to review and comment on the new channel dredging sections prior to the issuance of the FEIS. EPA also notes that based on the lack of information on this issue in the DEIS, the public may not have a full understanding of this issue for purposes of public review and comment.

+ Dredged Material Reuse: EPA recommends that the COE consider re-entering suitable sediments dredged at the entrance channel into the sand-sharing system (longshore drift) by placement at feeder berms located south of the entrance channel in areas free from seagrasses, hard/live bottoms, and/or cultural resources. Use of suitable dredged material for beach renourishment projects can also be a reasonable reuse if locally requested; seagrasses, hard/live bottoms and/or cultural resources are not covered; and grain size is compatible with the existing beach to reduce erosion potential. Feeder berms utilized for this purpose must be located within the territorial sea (i.e., shoreward of the 3 nautical mile line) in accordance with the Clean Water Act (CWA). Placement of dredged material outside the territorial sea is regulated under the MPRSA and must be placed in an EPA- designated ODMDS after proper characterization and evaluation, and in compliance with the Ocean Dumping Regulations (40 CFR 220-228).

In regard to the proposed project disposal of dredged material at sites 11 and 12 near the entrance channel as fish habitat mounds, such reuse may not be consistent with MPRSA and

should be further coordinated with EPA. Pursuant to Section 103 of MPRSA, ocean disposal of dredged material can only occur in an EPA-designated ODMDS. Alternatively, material can be placed as fill pursuant to Section 404 of the CWA within three miles of the baseline, such as the above feeder berms within the sand-sharing system. Although EPA supports fisheries enhancements and acknowledges that there is a fisheries exemption under MPRSA, the DEIS does not provide sufficient information to demonstrate that placement of dredged material at these sites would necessarily “develop, maintain or harvest fisheries” and exclude it from the Ocean Dumping Regulations (40 CFR 220.1(c)(2)). We are concerned that the fishery habitat value for these mounds would be minimal since they could easily erode, potentially be a navigational concern, be proximal to the turbidity and other effects of recurring maintenance dredging of the entrance channel, and would not provide any hard structure as is typical of fisheries enhancement projects.

Therefore, EPA recommends the evaluation of other alternatives, such as use of the Savannah ODMDS for the disposal of this material. If entrance channel dredged material cannot be properly reused in accordance with the CWA, the material, if shown to be suitable and in compliance with the Ocean Dumping Regulations, could potentially be disposed of at the Savannah ODMDS which is formally designated by EPA, consistent with MPRSA. EPA emphasizes that such project disposal at the ODMDS is a separate process from the current harbor deepening project NEPA process and will therefore need additional coordination.

>> *Environmental Justice / Children’s Health*

+ Air Emissions – According to page 5-150, the COE expects the volume of containers handled at the Garden City Terminal to increase from 2.6 million TEU until the terminal reaches its capacity of 6.5 million TEU around 2032. According to the DEIS, this is predicted to significantly increase the number of truck movements per day from 4,900 to approximately 13,000. In addition, while the number of containerized ships that may use the channel would eventually be constrained by the one-way traffic limitation for calling vessels, the port capacity and amount/percentage of cargo that can be unloaded in Savannah does not appear to be restricted. As suggested in our *General Air Quality* section above, EPA expects that this project has the potential to result in additional truck and locomotive traffic within the project areas, even after 2032. In turn, these additional landside emissions could affect potential nearby communities and should be evaluated.

+ Public Involvement – The DEIS indicates that representatives of the potential EJ communities have not expressed *substantial* concerns about the project. It is unclear what concerns have been expressed by EJ representatives, how they were resolved and what denotes *substantial* concerns (pg. 5-145). The FEIS should incorporate this information within the EJ section for public review. EPA notes that many meetings have been held related to the project, including two public workshops at the beginning of the project. We recommend that the FEIS describe how or whether specific efforts were made to engage EJ communities in the surrounding areas during that period or subsequently. EPA commends the COE for the use of an external Stakeholders Evaluation Group (SEG), which held approximately 65 full meetings. The outcomes of SEG’s extensive involvement should also be summarized in the FEIS as well as the degree to which representatives from potential EJ communities were involved or EJ concerns were discussed and

addressed in this forum. The FEIS should also indicate whether the port has a mechanism or long-term program designed to update surrounding communities on port expansion/changes and for receiving regular feedback or concerns from area residents.

+ Property Acquisition – The DEIS indicates that properties will be acquired for the project, but the precise properties have not been determined. According to the DEIS, the properties will be selected from a list identified by the FWS for acquisition and could contain a small number of residences. The COE believes these impacts will be minimal because less than five properties are expected to be acquired. The FEIS should include information regarding the property type (i.e., residential, commercial), location/number, and the percentage that are owned or occupied by minority and low-income populations and describe in the FEIS how any identified issues are resolved.

+ Noise & Lighting – EPA appreciates the efforts that have been made to minimize noise and lighting impacts. However, in the EJ section, there does not appear to be a discussion/overlay of existing noise levels on the communities that surround the port and its transportation corridors. This baseline information should be summarized in the FEIS EJ section, or cross-referenced. We note that the GPA sponsor has programs designed to reduce air, noise and lighting impacts on the surrounding communities. For example, GPA built noise berms to offset significant noise impacts and have reduced their facility lighting to conserve energy and offset impacts.

+ EJ Project Benefits – Although it does not mitigate for project impacts, job creation is the primary benefit (offset) derived from the proposed SHEP to both EJ and other populations living in the project area. Overall, the DEIS does a good job discussing the percentage of minority residents that are currently employed by GPA and one of three unions. Based on these percentages, it is likely that EJ populations will also economically benefit from the project by securing some of the 175 additional positions expected by 2020 due to future cargo growth.

+ Children's Health Documentation – Unlike the EJ section, demographics related to the population of children under age 18 within the project area relative to the reference population (i.e., county and state) are not fully incorporated. This information should be provided in the FEIS under Section 5.20 on children's health. Nevertheless, EPA appreciates the inclusion of a map depicting the location of schools, hospitals and child care facilities along the navigation channel. In terms of the impacts assessment, EPA notes that the DEIS indicates that the facilities are dispersed throughout the communities and are not located disproportionately near the navigation channel of the Garden City Terminal. While these facilities may be dispersed, it is unclear whether some areas along the navigation channel, terminal or transportation corridor (trucks/locomotives), currently experience (or potentially would in the future) substantive impacts from noise, traffic, air toxics, etc., relative to more removed and unaffected (baseline) areas. In this regard, we are pleased to note that the DEIS provides information related to several measures that are being made to reduce air emissions and to improve traffic in area neighborhoods in the future.

> ADDITIONAL COMMENTS

+ SHEP Modeling Results Presentation – As part of the NEPA process over the last decade, the COE has invested considerable amounts of money (over \$10 million) on at least 15 major models that address a wide range of issues. Numerous engineering and scientific models were developed to quantify impacts in water quality, DO, chlorides, salinity, fisheries and conversion of freshwater to brackish wetlands. Groundwater studies and surface water modeling efforts were conducted regarding saltwater intrusion and decreased DO levels within the project area, and modeling was also conducted to study the effects of hurricane storm surges within the deepened harbor channel.

Although the conclusions from technical meetings about these diverse models (including numerous comments) are incorporated into this DEIS, EPA recommends that a separate appendix or section in the main document be added to the FEIS to provide a synopsis of the modeling with emphasis on results. Similarly, we note that Section 1.03 (*Major Conclusions and Findings*) primarily only references other sections within the DEIS where topics are discussed such as water quality and fisheries (as opposed to providing an actual summary of conclusions for the reader). We therefore recommend that the FEIS summarize the COE's findings for those sections in an appendix or separate section in the main document. We believe such summary sections for modeling and other findings would improve the readability of the FEIS and consolidate results for public and agency review.

+ Cumulative Impacts – Appendix L is dedicated to addressing cumulative effects. We acknowledge that considerable analysis was provided, including identification of the affected resources as well as past, ongoing and reasonably foreseeable conditions.

Despite this substantive effort, we recommend that the 22 National Pollutant Discharge Elimination System dischargers identified in the TMDL located along the Savannah River be discussed and preferably listed with their main impact identified. This is particularly relevant in this case since project and discharger impacts (oxygen-demanding effluent) both deplete river DO levels and thereby causing a local cumulative effect. The COE may wish to coordinate with the respective states and EPA to document these dischargers.

+ Alternatives – We offer the following comments and clarification for alternatives:

* Action Alternatives Description: Given that the DEIS indicates that approximately 70% of the vessels calling on the port are not at their maximum load and design draft, we suggest that the FEIS provide the relative capability (percentage greater than the existing 70%: pg. 3: App. K) of each deepening alternative to accommodate large post-Panamax vessels. Such an evaluation would show if any alternatives other than the -47 and -48 ft options (both being considered the Tentatively Recommended Plan by the COE in the DEIS) could also reasonably accommodate post-Panamax vessels without waiting on high tide or limiting cargo.

* Jasper County Marine Terminal: We note that the Jasper County Marine Terminal was conceptually considered for Savannah River Mile (RM) 5 in Jasper County, South Carolina during the SHEP study timeframe. This terminal was referenced in the main document (pg. 5-

119) and in Appendix L discussing cumulative effects (pg. 46). EPA understands that no detailed studies have been conducted for the facility and that this alternative may or may not be presently considered as an alternative to the proposed deepening of the harbor. Nevertheless, we suggest that this alternate port terminal and its status (i.e., potential as a near-term alternative) be disclosed and discussed in the main document of the FEIS under *Alternatives* (Section 3.00).

The advantage of the discussed Jasper Terminal alternative is that it would be much closer to the coast than the Port of Savannah (5 RM versus 21 RM upstream the Savannah River) and therefore require significantly less channel dredging than the proposed expansion and thereby minimize additional fish habitat losses and increases in saltwater intrusion. Such a Jasper Terminal could one day also act as a reliever port to the existing Port of Savannah due to the Port of Savannah's one-way vessel traffic constraint, which would remain even after proposed project dredging. However, a terminal near the mouth of the Savannah River would result in significant wetland losses to construct its roadways/rail spurs and other infrastructure which currently do not exist there, as well as probable secondary developmental impacts in the surrounding area.

* *Details of COE's Maximum Authorized Plan:* This -48 ft deepening plan includes dredging (6 feet deeper) most of the harbor and existing turning basin (Kings Island Turning Basin at Stations 98+500 to 100+500), the eight berths at Garden City Terminal (Berths 2, 3, 4, 5, 6, 7, 8, and 9), widening the three bend wideners (Stations -23+000B to -14+000B, 27+700 to 31+500, and 52+250 to 55+000), constructing two meeting areas (Stations 14+000 to 22+000 and 55+000 to 59+000), and constructing an approximately 25,000 foot long extension to the existing 600 foot wide ocean bar channel from Station -60+000B to -98+600B. Dredging will remove about 15 million cubic yards of sediment from the Inner Harbor (Garden City Terminal from Station 103+000 to Station 4+000) with disposal in the existing upand CDF. Dredging will also remove about 13 mcy of sediment for the Entrance Channel (Stations +4+000 to -98+600B) with placement in nearshore feeder berms off of Tybee Island, in the submerged berms (2,000 feet from the ocean bar entrance channel), and possibly in EPA's approved Savannah ODMDS.

+ *Speece Cones* – The Speece Cone systems would be land-based, with water being withdrawn from the river through pipes, then super-saturated with oxygen and returned to the river to locally augment DO levels. We offer the following:

* *Locations:* The Speece Cone systems may be located in three locations (near Georgia Pacific, Hutchinson Island – west side, Hutchinson Island – east side). Table 5-24 projects 8-10 cones are proposed, depending on the alternative selected. The FEIS should include a detailed plan and commitment to specific Speece Cone locations, and include information about easements, rights-of-way, etc. where relevant.

* *Operation:* The energy consumption of Speece Cones could be an expensive operational cost from an electricity use perspective. In addition, depending on their final location, transmission line infrastructure to some of the cones may need to be constructed. The FEIS should consider these construction and operation costs in the overall project budget. EPA also understands that generators may be used to power isolated Speece Cones in lieu of constructing such transmission lines. If so, would these generators be operated by gasoline, diesel or electricity? If emissions are generated, have estimates been documented and

minimized? Although outages of a few hours should not significantly affect river DO levels, the FEIS should discuss the likelihood of brownouts or generator malfunctions and any contingency plans for power losses for a longer term.

* Noise: While the DEIS concludes that the proposed harbor deepening “is not expected to result in more than minimal adverse impacts as a result of noise,” and the Speece Cone systems may be located in locations that are not particularly noise-sensitive areas, no noise information from the operation of the Speece Cone systems was found in the main document of the DEIS (e.g., Section 5.21 under “A. Noise” on page 5-154 or in Section 5.2.2 under “Mitigation Impacts to Dissolved Oxygen” on page 5-48 were reviewed). The FEIS should disclose such information.

EPA is requesting such noise information since we understand that operational noise levels during the Speece Cone project demonstration (pilot study) were substantial. Therefore, we request that noise levels during operation be modeled and the anticipated seasonal schedule for operation be documented. Moreover, we suggest that noise attenuation methods be considered in terms of shielding around the cones and insulation within the cones, or perhaps upgrades in technology to collectively generate less noise at the source (source reduction). Moreover, the cumulative noise impacts of the 8-10 Speece Cones proposed should also be considered if two or more are located proximally.

+ General Air Quality – We offer the following additional comments on the emissions inventory for the current conditions for those measured criteria pollutants and other parameters provided in the DEIS (App. K):

* Truck Model Years: The model years of the Jockey trucks, for which the COE calculated emission rates, is unclear. Without model years, emissions estimates cannot be made.

* MOBILE Modeling: The COE used the certification levels for incoming engines instead of the in-use emission factors. These factors can be calculated using MOBILE 6 or the new MOVES model. If the COE uses MOVES, there is an air toxics model which will provide a breakout of key air toxics from this fleet.

* Locomotive Calculations: The hours of use from a daily average to a weekly average do not add up. Additional information is needed on how the weekly average was calculated. The 21 hours/day and only 69 hours/week for switching implies that the locomotives are being used a little over three days. Further, idling emissions can be significant. This should be calculated in the FEIS.

* Emission Analysis: The DEIS is limited in the supporting data for the emission estimates provided. The COE should provide model inputs and outputs for calculation of the on-highway and non-road emissions. This information will provide a sound support for the data listed in the DEIS. Without such support, the validity of the estimates cannot be assessed.

+ Air Toxics – The following are additional comments on air toxics (all page and table references are to Appendix K).

* Port Growth & Efficiency: Page 6 Section 4.0 notes that “At 2032, the capacity of the port would be reached. This means that between 2032 and 2065, no additional growth occurs in commodities or annual vessel numbers. No additional vessels could load/off-load at the port each year between 2032 and 2065.” Page 80 notes that: “The reduced emissions reflect the lower number of container ships that would call in a given year with a deeper harbor.” However, page 62 notes that: “Growth in such (cargo handling) efficiency has been commonly observed in the past, and is expected to continue to occur at Savannah, but the ability to predict its amount and timing are quite difficult.” If increased cargo handling efficiencies occur, then the port might accommodate additional visits by large ships. EPA recommends that the COE make estimates concerning the likely efficiency increases that might occur, how this might allow additional cargo to pass through the port, and the associated increase in air pollution emissions. It should be noted that page 94 states: “The volume of air toxics emitted as a result of port operations is expected to increase as the volume of cargo passing through the port rises.” This scenario should be evaluated in the FEIS.

* Port Vessel Calls: Pages 7-8 Table 4-3 summarizes the anticipated vessel calls at the Garden City Terminal over the next several decades for the No Action Alternative and a number of channel deepening alternatives. For the No Action Alternative or “42 feet Baseline”, the total number of calls increases from 2,172 in the year 2015, to 4,148 (nearly twice as many) in the year 2032 when the capacity of the port should be reached. This increase is largely due to an increasing number of post-Panamax ships calling at the port. Post-Panamax calls rise from 308 in the year 2015 to 2,226 in 2032, an increase of 1,918 post-Panamax calls per year, nearly the entire increase that is projected to occur in calls to the port by 2032.

It is unclear how this projected increase in post-Panamax visits would be possible if, as the DEIS states in the Abstract (pg. 1): “In excess of 70% of the vessels do not call on Savannah Harbor at their maximum capacity or design draft. The “light loading” of vessels increase costs to the shipper, which are eventually passed on to the consumer. Less efficient vessels also generally result in higher shipping costs.” Page 3 of Appendix K supports this concern, stating: “The GPA indicates that 70% of the container vessels that called on the port in 2006 were operationally constrained by the channel depth. As the newer, larger container vessels increase their calls at the port, that percentage will increase.” Post-Panamax ships are among the ships that will be operationally constrained. Given that they comprise nearly the entire increase in calls to the port over the next two decades, the number of ships that would be operationally constrained by the current channel depth could increase dramatically – to nearly all ships calling at the port.

EPA assumes that the resulting delays from congestion and the need to schedule visits to the terminals according to the tides would be economic disincentives to the use of the Port of Savannah, and result in a redirection of trade to other ports if the channel were not deepened. If redirection of trade to other ports did not occur, the EPA further assumes that the base case would result in greater waiting times for the ships to be able to navigate to and from the terminals and corresponding additional air pollution emissions.

* Port Truck Calls: Page 39 Section 5.14 refers to trucks calling at the Garden City Terminal. The FEIS should include any data on the number of trucks calling at the Ocean City

Terminal and private terminals along the river. Also, Table 5-50 cites the number of trucks calling at Garden City in 2008. These values are identical to those in an earlier version of this document from 2006. The values should be updated or the date on the table corrected.

* Locomotive Emissions: The last sentence on page 44 indicates the COE obtained information from the NMIM “SCC Toxics” database provided by EPA Region 5. For the FEIS, the COE should identify the source of emission information used for locomotives and commercial marine sources.

* Table 5-63 Values: The values in this table (pg. 45) should be checked since they differ significantly from values in the draft version of the table provided by the COE some time ago. This table compares air toxics emissions from the port with those from the entire county. This is an inappropriate comparison in that air toxics pose a threat primarily to those who are near the source. A comparison between emissions at the port and those countywide could be misleading because the emissions from port activities are more localized than those from the county as a whole. The comparison of air toxics emissions between the county and port presented in this table should be accompanied with an acknowledgement that localized impacts at the port could be significant. We suggest the COE include an emissions density map, population density map, and map identifying locations of sensitive populations which would be informative for the reader in evaluating this information.

The first sentence on page 45 refers to Table 5-61. Should this refer to Table 5-63? The first sentence says that the table lists the relationship of 28 toxics to other calculated pollutants. Is there a column missing that would indicate percentages or ratios between the toxics and other pollutants? How did the COE develop the values listed in Table 5-63? If ratios were used to estimate emissions based on other parameters, how those ratios were developed should be detailed in the FEIS (i.e., what specifically are the numerator and denominator for each and where were those data were obtained?). The quantity of air toxics emissions should be identified by source type. This would help determine the areas that would benefit most from emission reduction efforts.

* 2006 Air Quality Analysis: The first sentence on the last paragraph of page 3 refers the reader to the “Air Quality Analysis, Savannah Harbor Expansion Project” which was prepared in 2006. The text says that this report is available from the Savannah District. However, we suggest it be included as an appendix to the FEIS, or alternatively, be made available online.

* Editorial Comment: The first sentence on the last paragraph of page 5 states that the 2006 Air Emissions Analysis is Attachment A. However, Attachment A is the container fleet forecast.

+ EJ & Children’s Health – EPA offers these additional comments:

* EO 12898: The DEIS (pg. 5-144) states that “Executive Order 12898 deals with Environmental Justice.” This statement should be amended in the FEIS to reflect that the EO deals with EJ “in minority and low-income populations”. The DEIS also indicates that the EO states that “...the Federal government would review the effects of its proposed actions on low

income communities.” We believe this statement should be removed in the FEIS because it is not found in the EO. We offer that it is more accurate to retain the following statement: “Federal agencies are ‘to the greatest extent practicable and permitted by law’ identify and address ‘as appropriate’, disproportionately high and adverse human health and environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States.”

* EO 13045: EPA appreciates the inclusion of a children’s health section related to Executive Order (EO) 13045, which deals with the protection of children from environmental health and safety risks. As part of the background information, the DEIS indicates that the EO states that “...the Federal government would review the effects of its proposed actions on children because they may suffer disproportionately from the environmental health risks and safety risk.” This statement should be removed in the FEIS since we do not believe it is accurate. However, the subsequent DEIS statement accurately reflects the EO and should be retained: “Federal agencies are to ‘identify and assess environmental health risks and safety risks that may disproportionately affect children;’ and ‘ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.’”

+ Sea Level Rise – EPA and the COE concur that as sea level increases at Savannah, the amount of tidal freshwater wetlands will decrease. Since there have been continual records of sea level at Savannah for over 200 years, EPA understands that the COE decided that it would rely heavily on that site-specific historical data in its prediction of future trends in sea level rise at this site. Examination of the historic information revealed that sea level has been rising relatively constantly at Savannah at an average of +3 mm per year. Therefore, the COE decided to use a continuation of this historic rate of sea level rise at Savannah in its predictions of future wetland distributions in the estuary. EPA notes that the +3 mm per year value is within the bounds of sea level rise predicted for the next century in the 2007 report from the International Panel on Climate Change (+0.18 to +0.59 meters).

+ Fisheries – EPA gives deference to the fishery experts of FWS, NOAA and their state counterparts regarding project impacts and mitigation. However, we wish to offer that EPA conceptually supports a fish passage at the New Savannah Bluff Lock and Dam since it would open up 20 river miles of former (pre-dam) habitat above the dam that is not affected by the SHEP dredging. We also agree with the COE that the original 2002 proposal for such passage should be updated; however, we will defer to NOAA, FWS and their state counterparts regarding any new or preferred designs as to the engineering of the passage structure.

Conceptually, however, we believe that whatever design is selected should be easily available to, and usable by, all anadromous/catadromous species of SHEP concern (in terms of their varying size and behavior) and perhaps optimal for the Shortnose sturgeon due to the reduction of its habitat by past and proposed dredging below the dam and its federally endangered species status.

+ Maintenance Related to Savannah NWR – The federal government is responsible for maintenance of the Diversion Canal, the channels in Little Back River and Middle River, and the canals and control works for the SNWR. In May 2010, the COE entered into a contract to

rehabilitate a major portion of the project, with work beginning in July 2010. The COE has requested the additional funds that are required to complete the rehabilitation work. The FEIS should include additional details on the progress of this important work.

+ Bank Erosion at Old Fort Jackson – The concerns that had been expressed during public review of the Tier I EIS about bank erosion at Old Fort Jackson have been addressed. In 2003, the COE partnered with the GDNR (which owns the site) to stabilize the shoreline. Similarly, the Manager of the Fort Pulaski National Monument has expressed concerns about the ongoing erosion that is occurring along portions of their river shoreline. The COE determined that the erosion is the result of several factors, but an increase in vessel size is not expected to “substantially” increase the rate of the ongoing erosion, but may have some effect. EPA recommends that the COE partner with the National Park Service to address river shoreline erosion at the Fort Pulaski National Monument.

+ COE-SHPO Programmatic Agreement – We suggest that a signed and dated Programmatic Agreement between the COE and the State Historic Preservation Office (SHPO) from Georgia and South Carolina be included in Appendix G.